We claim:

1. A spatial light modulator, comprising:

a control circuitry substrate including:

a plurality of electrodes for receiving selected voltages;

a memory buffer;

a display controller; and

a pulse width modulation array; and

a mirror array substrate bonded to the control circuitry substrate, the mirror array substrate including:

a plurality of micro mirror plates;

a spacer support frame for spacing the plurality of micro mirror plates apart from the control circuitry substrate and supporting the micro mirror plates; and

a plurality of hinges, each hinge connected to the spacer support frame and to a micro mirror plate, for allowing the mirror plate to rotate relative to the spacer support frame about an axis defined by the hinge.

2. The spatial light modulator of claim 1, further comprising a plurality of CMOS inverters, wherein each of the plurality of electrodes is driven by a different CMOS inverter.

3. The spatial light modulator of claim 1, wherein each of the plurality of micro mirror plates, the spacer support frame, and each of the plurality of hinges are part of a single continuous piece of material.

4. The spatial light modulator of claim 3, wherein the material is single crystal silicon.

5. The spatial light modulator of claim 1, wherein the mirror array substrate is aligned with the control circuitry substrate so that each electrode is located under a micro mirror plate and associated with that mirror plate such that the selected voltage received by the electrode controls a rotational movement of the mirror plate.

6. The spatial light modulator of claim 1, wherein the mirror array substrate is bonded with the control circuitry substrate by a low temperature bonding method performed at less than approximately 500 degrees Celsius.

7. A single-chip spatial light modulator, comprising:

a control circuitry substrate including:

an electrode layer with a plurality of electrodes for receiving a selected voltages; and

a control circuitry layer including line memory buffers and a pulse width modulation array; and

a mirror array substrate bonded to the control circuitry substrate, the mirror array substrate including an array of a plurality of micro mirrors.

8. The spatial light modulator of claim 7, wherein the micro mirrors of the mirror array substrate are fabricated from a single continuous piece of material.

9. The spatial light modulator of claim 8, wherein the single continuous piece of material is single crystal silicon.

10. The spatial light modulator of claim 7, wherein the array of a plurality of micro mirrors comprises:

a plurality of micro mirror plates;

a spacer support frame for spacing the plurality of micro mirror plates apart from the control circuitry substrate and supporting the micro mirror plates; and

a plurality of hinges, each hinge connected to the spacer support frame and to a micro mirror plate, for allowing the mirror plate to rotate relative to the spacer support frame about an axis defined by the hinge.

11. The spatial light modulator of claim 10, wherein the micro mirror plates, the spacer support frame, and the hinges are fabricated from a single continuous piece of material.

12. The spatial light modulator of claim 10, wherein each of the micro mirror plates of the mirror array substrate is aligned with and associated with at least one of the plurality of electrodes of the control circuitry substrate so that the selected voltage received by each electrode acts to control a rotational movement of the associated mirror plate.

13. The spatial light modulator of claim 7, wherein the mirror array substrate is bonded with the control circuitry substrate by a low temperature bonding method performed at less than approximately 500 degrees Celsius.

14. The spatial light modulator of claim 7, wherein the plurality of electrodes of the control circuitry substrate are on a passivation layer.

15. The spatial light modulator of claim 14, wherein the passivation layer is on a circuitry layer that includes the line memory buffers and the pulse width modulation array.

16. The spatial light modulator of claim 15, wherein the circuitry layer further includes a display controller.

17. A spatial light modulator having both a micro mirror array and control circuitry integrated on one chip for improved data transfer rates, comprising:

a mirror array substrate including :

a plurality of micro mirror plates;

a spacer support frame for spacing the plurality of micro mirror plates apart from the control circuitry substrate and supporting the micro mirror plates; and

a plurality of hinges, each hinge connected to the spacer support frame and to a micro mirror plate, for allowing the mirror plate to rotate relative to the spacer support frame about an axis defined by the hinge;

a control circuitry substrate including:

a control circuitry layer with control circuitry including a plurality of line memory buffers and a pulse width modulation array;

an electrode layer with a plurality of electrodes connected to the control circuitry for receiving selected voltages from the control circuitry and each electrode is associated with a micro mirror plate of the mirror array substrate so that the selected voltage received by an electrode creates an electric field that controls the rotation of the associated micro mirror plate; and

wherein the control circuitry and the electrodes of the control circuitry substrate are fabricated and then the control circuitry substrate is bonded to the mirror array substrate.

18. The spatial light modulator of claim 17, wherein the micro mirror plates, the spacer support frame, and the hinges are fabricated from a single continuous piece of material.

19. The spatial light modulator of claim 17, wherein the micro mirror array is partially fabricated, then bonded to the control circuitry substrate, and then fabrication of the micro mirror array is completed.

20. The spatial light modulator of claim 17, wherein the mirror array substrate is bonded with the control circuitry substrate by a low temperature bonding method performed at less than approximately 500 degrees Celsius.